Claim 16,   line 1, after "15" insert --,--.

Claim 17,   line 1, after "14" insert --,--.

Claim 18,   line 1, after "14" insert --,--.

Claim 19,   line 1, after "14" insert --,--;

        line 4, delete "they" and insert --the cumulative data--;

        line 6, delete in its entirety;

        line 7, delete in its entirety;

        line 8, delete "predetermined time,".

Claim 20,   line 1, after "system" insert --,--.

REMARKS

Reconsideration and allowance in view of the foregoing amendments and the following remarks are respectfully requested.

By this amendment, editorial changes have been made throughout the specification and claims of the present application to correct grammatical errors and other informalities.

Claims 1-12 and 14-20 remain pending for examination. Claim 13 has been canceled without prejudice or disclaimer.

As a result of the cancellation of claim 13, the corresponding rejection under 35 U.S.C. §112, second paragraph, for indefiniteness has been rendered moot, and therefore Applicants request that this rejection be withdrawn.

Claim 5 has been amended to depend from claim 4, and therefore Applicants request that the objection thereto be withdrawn.

Independent claims 1 and 4 have been presently amended to recite a data structure <u>stored on a storage medium</u> in a database, to thereby overcome the rejection of claims 1-6 under 35 U.S.C. §101, and therefore Applicants request that this rejection be reconsidered and withdrawn.

Specifically, the claimed invention is now directed towards a data structure <u>stored on a storage medium</u> to thereby define structural and functional interrelationships between "the computer program and the medium which permit the computer program's functionality to be realized," and is therefore statutory subject matter, according to Section IV. B1(a) of the Examination Guidelines for Computer-Related Inventions. Thus, Applicants request that this rejection be withdrawn.

Applicants respectfully traverse the rejection of claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Crus et al., and request that this rejection be reconsidered and withdrawn.

As shown in Figure 3 of the present application, storage apparatus 13 shows data area 14 (see Figure 1) which has consecutive areas secured on the storage apparatus 13 so as to be divided into management blocks, or segments, 20. Collected data are stored in one of the management block segments 20, along with a <u>bookmark</u>. That is, each segment 20 includes, for example, data storage area 21 which stores real data and <u>a bookmark information area 22</u> which stores management information for the data stored in the data storage area 21. As further recited in the pending independent claims, the bookmark information areas include bookmark information indicating a time corresponding to a time series data piece loaded in each of the data areas <u>and</u> state transition information which indicates a state of the data piece

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in each respective data area, wherein the state transition information may include a value indicating an online state in which the data area is able to be retrieved and a value indicating a loading state in which loading of the data in the respective data area has not yet been completed and therefore the data area is not eligible for retrieval.

On the other hand, although the present rejection indicates that "the bookmark as claimed merely keeps track of the time the data is loaded and the status of data storage", there is no teaching or suggestion provided in the reference of Crus et al. of the claimed bookmark information areas which includes bookmark information indicating a time corresponding to a time series data piece stored in the respective data area and state transition area indicating a state of the data piece in that respective data area.

Furthermore, the status indicator 26 described by Crus et al., which includes five data page status indicators for the respective page, is provided in a separate segment control block 20 stored on space map page 14 (see Crus et al., abstract and Figure 2). On the other hand, the bookmark information areas of the claimed invention are respectively provided at predetermined locations in the respective data areas, as presently claimed and as shown in Figure 3 of the present application. Thus, the reference fails to teach or suggest a fundamental feature of the claimed invention.

It is respectfully submitted that the points of rejection set forth in the Office Action regarding independent claim 1 are also applied to the remaining independent claims 4, 7, 12, 14 and 20, and therefore all of the pending claims 1-12 and 14-20 are distinguishable from the teachings of Crus et al. for the reasons set forth above. Therefore, Applicants request that the outstanding rejection of claims 1-20 under 35 U.S.C. §103 be withdrawn.
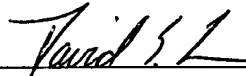
The remaining references of record have been studied. It is respectfully submitted that they do not compensate for the deficiencies of the reference utilized in rejecting original claims

1-20.

All objections and rejections having been addressed, it is respectfully submitted that the present application is now in condition for allowance, and a Notice to that effect is earnestly solicited.

To the extent necessary, Applicant(s) petitions for an extension of time under 37 CFR §1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP Account No. 01-2135 (500.36133X00) and please credit any overpayment of fees to such deposit account.

Respectfully submitted,

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